

# COMPARISON OF SULFURYL FLUORIDE LABELS AND APPLICATOR MANUALS



Dow AgroSciences, LLC  
EPA Reg. No. 62719-4  
Updated 3/3/2010



Ensysrex II, Inc.  
EPA Reg. No. 81824-1  
Updated 5/20/2009



Drexel Chemical Company  
EPA Reg. No. 19713-596  
Updated 12/9/2009

BRANDI MARTIN  
DPR-PESTICIDE REGISTRATION BRANCH  
2010

# BRANCH 1 REPORT

## PERTINENT AREAS

STATE OF CALIFORNIA  
DEPARTMENT OF PESTICIDE REGULATION

### STRUCTURAL FUMIGATION USE MONITORING INSPECTION REPORT

PR-ENF-107 (REV. 01/10) Page 1 of 1

☐ COMPLETE  
☐ PARTIAL  
☐ FOLLOW-UP INSPECTION

ORIGINAL INSP. # \_\_\_\_\_

107-

INSPECTING COUNTY \_\_\_\_\_

FIRM INSPECTED	BUSINESS REGISTRATION NUMBER <input type="checkbox"/> PR <input type="checkbox"/> BR <input type="checkbox"/> UNL	VEHICLE LICENSE PLATE
FIRM ADDRESS	TELEPHONE NUMBER	WIND VELOCITY _____
PERSON INSPECTED	INDIVIDUAL LICENSE NUMBER <input type="checkbox"/> OPR <input type="checkbox"/> FR <input type="checkbox"/> UNL	DIRECTION _____ to _____ REQ. DISTANCE MAINTAINED <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A
APPLICATION SITE ADDRESS		PEST _____ TREATMENT SITE _____

HANDLER'S NAME	ACTIVITY	PERSONAL PROTECTIVE EQUIPMENT WORN

PESTICIDE NAME / MANUFACTURER	LABEL REGISTRATION NUMBER	SIGNAL WORD	FORMULATION	RATE

STRUCTURAL FUMIGATION ☐ APPLICATION ☐ AERATION ☐ CERTIFICATION

REQUIREMENTS		Section	COMPLIANCE		
			YES	NO	N/A
1. Registered in County	15204.5(a)				
2. County Notified 24 Hours Prior	15204.5(d)				
3. Written Notice to Occupant	8538				
4. Pesticide Disclosure Signed / Available	1970.4				
5. Registered Label Available at Use Site	6602				
6. Labeling - Site / Rate / Concentration / Other	12973				
7. Labeling - Aeration / Certification	12973				
8. Labeling - Bagging, Pets Removed, Etc.	12973				
9. Labeling - PPE	12973				
10. Regulations - PPE	6738				
11. Respiratory Protection	6739				
12. Handler(s) Trained	6724				
13. Emergency Medical Care, Posting	6726				
14. Decont. Facility, Site "Warning/Danger"	6734				
15. SCBA Worn / Cont. Monitoring / TRAP Used	6780(b)				
16. Accident Response Plan at Work Site	6780(d)				
17. 2 Trained Employees - Application & Aeration	6782(a)				
18. Fume of Enclosed Spaces/Proper Entry	6782(d)				
19. Proper Management of Treated Area	6782(f)				
20. Connecting Structures	1970.6				
21. Accurate Measurement	6604				
22. Protection of Persons / Animals / Property	6614				
23. Structure Vacated / Secured Against Reentry	8505.7				
24. Equipment in Good Repair and Safe	6742				
25. 2 SCBA / CPR Chart / Mfg. Instructions	1971(a)				
<b>COMPLIANCE ACTIONS</b>					
Cease and Desist Order 11897 / 13102	<input type="checkbox"/> YES <input type="checkbox"/> NO				
Follow-up Required	<input type="checkbox"/> YES <input type="checkbox"/> NO				
Correct Noncompliances By:					




REQUIREMENTS, (Continued)		Section	COMPLIANCE		
			YES	NO	N/A
26. Test Equipment	1971(a)(2)				
27. Re-entry Requirements	1973				
28. Direct Supervision	8505.2				
29. Warning Signs on All Sides of Structure	1974				
30. Required Information on Warning Signs	8505.10				
31. Signs - Attic / Under-area	8505.11				
32. Warning Agent Used	8505.12				
33. Equipment Property Identified	6630				
34. Containers Labeled / Closures	6676				
35. Proper Pesticide Transport	6682				
36. Pesticide Handling / Use / Storage	1983				
37. Methyl Bromide Requirements	6454(a)				
38. MB - Tarps Accept. / Condition / Ret. Method	6454(b-e)				
39. MB - Warning Agents / Fans / Aeration	6454(f-m)				
40. MB - Measuring Concentration	6454(n)				
TOTAL		TOTAL			

TARP / AERATION CHECK (No Crew On Site)		Section	COMPLIANCE		
			YES	NO	N/A
1. Registered in County	15204.5(a)				
2. County Notified 24 Hours Prior	15204.5(d)				
3. Labeling - Aeration / Certification	12973				
4. Warning Signs on All Sides	1974				
5. Structure Vacated / Secured Against Reentry	8505.7				
6. Required Information on Warning Signs	8505.10				
TOTAL		TOTAL			

Remarks - Include a detailed description of noncompliances. When additional space is required, continue on Inspection Report / VN Supplement, PR-ENF-111.

# COMPARISON OF LABELS

## ■ ACTIVE INGREDIENT PERCENTAGE

		
99.8%	99.8%	99.3%

## ■ DIRECTIONS FOR USE

-First Aid Statement:

“If Inhaled:” >>

-Get exposed person to fresh air.  
 -Keep warm and at rest.  
 -Make sure person can breathe freely.  
 -If breathing has stopped, give artificial respiration.

-Do NOT put anything in the mouth of an unconscious person.

-Call a poison control center or doctor for further treatment advice.

-Move person to fresh air.

-If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.

-Call a poison control center or doctor for further treatment advice.

# COMPARISON OF LABELS

## ■ STRUCTURAL FUMIGATION MANUAL

- Now referenced on all 3 labels as part of labeling
- All manuals have been stamped and registered in CA
- ONLY** Drexel Master Fume label states:

**“The Manual for Structural Fumigation Must be in the Possession of the Applicator During Use of This Product.”**

- Vikane and Zythor state the above in their manuals

## ■ TRAINING & STEWARDSHIP PROGRAM

- Now stated on all 3 labels as a requirement for application personnel to participate in prior to fumigation.




**CHECK CYLINDER LABEL!!!**

CCR 6602, 6676,  
6724

# COMPARISON OF LABELS

## ■ FACT SHEET (Required)

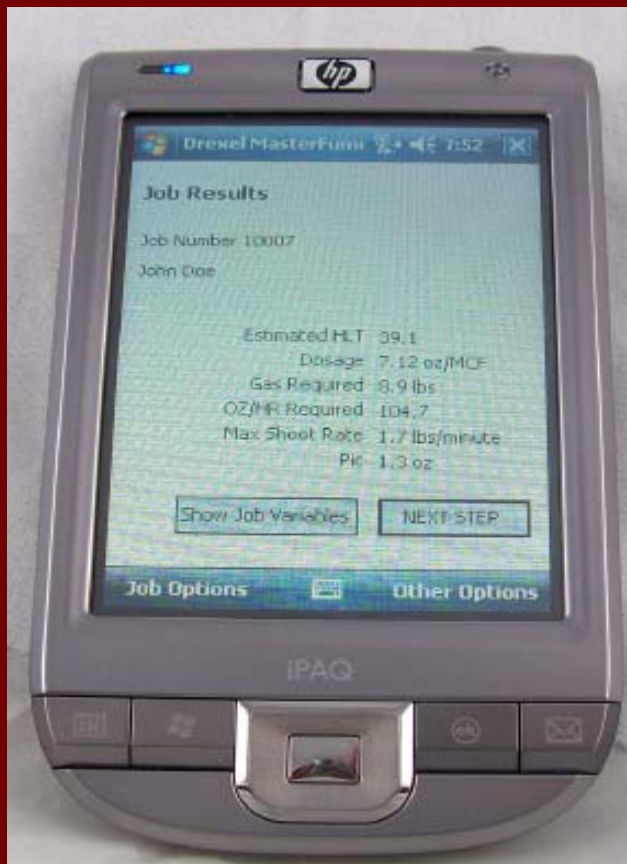
## ■ DOSAGE & EXPOSURE TIME (Sulfuryl Fluoride)

		
<p>■ Prior to the parties <b>entering into a fumigation agreement</b>, the Fact Sheet for Vikane/this product must be provided to an adult occupant of the structure to be fumigated.</p>		<p>■ Prior <b>to the application</b> of Zythor to a structure, the Zythor Fact Sheet must be provided to an adult occupant of the structure to be fumigated.</p>
Fumiguide Calculator	Drexel Chemical's Master Rate Calculator	Fumicalc Computer Program



# WARNING AGENT

## ■ CHLOROPICRIN CALCULATIONS & ALTERNATIVE



Fumiguide  
calculator  
OR  
1 fl.  
oz./10,000ft<sup>3</sup>-  
15,000ft<sup>3</sup>



Master Fume  
Calculator  
System OR  
1fl. oz./10,000ft<sup>3</sup>-  
15,000ft<sup>3</sup>



Fumicalc  
computer  
program  
OR  
1fl. oz./10,000ft<sup>3</sup>-  
15,000ft<sup>3</sup>



BPC  
8505.12

# BREATHING ZONE

“Structure may be reoccupied when concentrations in the breathing zones in all units is 1ppm or less.”

-Now all 3 labels have a definition:

“Areas within the structure or units/rooms where individuals typically stand, sit or lie down.”



SPCB 1973, CCR  
6780(b), 6782(d,f)

# PREPARATION FOR FUMIGATION

- All 3 labels advise “Remove from the structure to be fumigated all persons, domestic animals, pets and desirable growing plants”
- NOW, all 3 labels mention how to handle FISH TANKS, but Vikane’s label refers to their manual to view this information.





# FISH TANKS

■ Remove fish tanks containing live fish, or remove the fish, or develop a plan for preparing the tank for fumigation. If necessary, exclude water in the tank and biological filters, if present, from the fumigated space by sealing with gas resistant tarps or sheeting. If water aeration is required during fumigation, provide fresh air from outside the fumigated space for the tank aerator.



# TYPES OF FUMIGANT BAGS USED



Nylofume bags



Master Fume bags  
Nylofume bags  
Fumiguard bags



Nylofume bags  
Fumiguard bags  
**\*Need to update manual!!**



# USE PRECAUTIONS



As of 5/20/2009, the Zythor label states the same information as the Vikane and Drexel Master Fume labels:

“...Two persons, however need not be present if monitoring is conducted remotely (outside the area being fumigated) and no one enters the fumigated space/structure.”

# PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Vikane and Drexel Master Fume updated their labels to be in sync after the Zythor label revision on 5/20/09.
- Splash-resistant goggles OR full face shield

**DO NOT WEAR RUBBER GLOVES OR RUBBER BOOTS!!**





# CONNECTED STRUCTURES

- All 3 labels now define it as:  
“Any structure connected with the structures to be fumigated by construction elements (e.g., pipes, conduits, ducts, etc.) which may allow passage of fumigant between the structures.”



Chloropicrin **ONLY** applied where Sulfuryl Fluoride is introduced.



# MULTI-UNIT STRUCTURES

- Viand, Drexel Master Fume and Zythor labels have the same verbiage now BUT:  
How will the California Aeration Plan (CAP) effect the use of Sulfuryl Fluoride on Multi-Unit Structures?
- DPR letter dated 10/14/09  
-SF Reevaluation: Need data on multiple-story multiple dwelling units to determine if the CAP will reduce SF levels to below 1ppm in larger structures



Without this data, DPR may need to limit use of the CAP to one-story single family residences

CCR 6780(b)

# FUMIGATION OF CONSTRUCTION MATERIALS, FURNISHINGS, VEHICLES AND SHIPPING CONTAINERS



- Specific instructions on **ONLY** Zythor label, but detailed information is on Vikane and Drexel Master Fume applicator manuals

# PASSENGER RAILCARS



- All 3 labels state that, “Chloropicrin need not be used when fumigating passenger railcars; however, a thorough walk-through inspection must be performed of each railcar with doors being immediately locked upon leaving each car, and a guard must be posted during fumigant introduction, exposure period, and aeration.”

Dow AgroSciences

**Vikane**<sup>®</sup>

Specialty Gas Fumigant

**ONLY** label that has specific instructions for Securing and Aeration of Passenger Railcars.

Drexel

**MASTER FUME**<sup>®</sup>

Specialty Gas Fumigant

Drexel Master Fume applicator manual does have a section that includes “Railroad Cars” -considers them Small Structures (refer to CH.5)



**ZYTHOR**

Zythor applicator manual only mentions “rail cars” as a site where you can use Zythor and nothing more.



# POSTING & PLACARDING

Dow AgroSciences

**Vikane®**

Specialty Gas Fumigant

Drexel

**MASTER FUME®**

Specialty Gas Fumigant



**ZYTHOR**

1. The signal word  
DANGER/PELIGRO and  
the SKULL and  
CROSSBONES symbol.

2. The statement, "Area  
under fumigation, DO  
NOT ENTER/NO  
ENTRE."

3. The date of fumigation

4. Name of fumigant  
used.

5. Name, address, and  
telephone number of the  
applicator.

1. Has to be in RED!!

2.-3. Same as above

4. Add EPA Reg. No.

5. Add contact  
information of the  
fumigation company

**DANGER/PELIGRO**

PESTICIDA AREA UNDER FUMIGATION

AREA UNDER FUMIGATION USING  
**SULFURYL FLUORIDE (ZYTHOR)**

VENENO  
DO NOT ENTER  
NO ENTRE

EPA REGISTRATION# 81824-1

**DEADLY POISON**

ALL PERSONS ARE TO KEEP AWAY

FUMIGANT INJECTION DATE \_\_\_\_\_ TIME \_\_\_\_\_

NAME OF COMPANY \_\_\_\_\_

COMPANY BUSINESS ADDRESS \_\_\_\_\_

CERTIFIED OPERATOR IN CHARGE \_\_\_\_\_

SPECIAL I.D. CARD HOLDER \_\_\_\_\_

DAY TELEPHONE \_\_\_\_\_ NIGHT TELEPHONE \_\_\_\_\_

**ZYTHOR WARNING SIGN – Printed in Red**

**Need to Update Manual!!!**

# DEVICES USED TO MONITOR A FUMIGATION



**Fumiguide Calculator:** used for both non-monitored & monitored fumigations  
**Fumiguide Y:** another calculator specific for monitored fumigations  
**Fumiscope:** only for monitored fumigations

**Master Fume Calculator:** used for both non-monitored & monitored fumigations  
**Fumiscope:** only for monitored fumigations

**Fumiscope:** only for monitored fumigations>>then data is entered into the Fumicalc program



**Fumiscope is NOT sensitive enough to use as a clearing device AFTER the exposure period.**



# DETECTION DEVICES FOR SULFURYL FLUORIDE

(To Clear A Structure)

- Vikane, Zythor and Drexel Master Fume labels all refer to these devices:



INTERSCAN



MIRAN [SapphIRe]



SPECTROS SF-ExplorIR

Zythor and Vikane labels reference the fact that the INTERSCAN must be calibrated within one month prior to its use as a Low Fumigant Level Detection Device. Drexel Master Fume NOW has this information as well and other specific details in its label and applicator manual.

# AERATION PROCEDURES

- **NOW** Drexel Master Fume's label matches Vikane's and Zythor's:  
"If the structure has a central air handling system, the fan (or blower) should be activated for each unit if operational."
- Only Vikane and Drexel Master Fume have:  
"Note: During the initial one hour aeration procedure, approved respiratory protection must be worn until the concentration of this product is confirmed not to exceed 1ppm with an approved detection device."



# ANY QUESTIONS???

## **\*\*NOTE\*\***

ZYTHOR's last 35 pages of their manual is a sub-manual on the Fumicalc computer program.

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